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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/445,423	12/10/1999	KAZUO HATA	2839-0072-0	9913

7590 01/09/2002

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EXAMINER

FERGUSON, LAWRENCE D

ART UNIT	PAPER NUMBER
1774	13

DATE MAILED: 01/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/445,423	HATA ET AL.
	Examiner	Art Unit
	Lawrence D Ferguson	1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 16 October 2001.
- 2a) This action is **FINAL**.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-12 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a)  The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This action is in response to the amendment mailed October 19, 2001.

Claims 11 and 12 were added, rendering claims 1-12 pending.

### ***Claim Rejections – 35 USC 103(a)***

2. Claims 1, 3, 5-7 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osaka et al. (U.S. 5,057,360) for the reasons set forth in paragraph 11, in the previous office action, mailed May 09, 2001. Although Osaka does not specifically disclose the spherical particles ratio, the spherical particle ratio is optimizable. It would have been obvious to one of ordinary skill in the art to optimize the components because discovering the optimum or workable ranges involves only routine skill in the art.

### ***Claim Rejections – 35 USC 103(a)***

3. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuo et al. (JP 8151270) for the reasons set forth in paragraph 14, in the previous office action, mailed May 09, 2001.

### ***Claim Rejections – 35 USC 103(a)***

4. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuo et al. (JP 8151271) for the reasons set forth in paragraph 17, in the previous office action, mailed May 09, 2001.

***Response to Arguments***

5. Applicant's arguments to rejection under 35 U.S.C. 112, mailed October 19, 2001 have been fully considered and are withdrawn due to amending the abstract and Claim 4 to read "defect(s)" versus "detect(s)" and by amending claims 9 and 10 to depend from single dependent claim 1

6. Applicant's arguments to 35 USC 103(a) being unpatentable over Osaka et al. (U.S. 5,057,360) has been fully considered but is unpersuasive. Applicant argues Osaka fails to suggest the independent Claim 1 limitation of "a ceramic sheet having not more than 5 defects in an area having a length of 30 mm or less, the defect being detected based on an image obtained with a charged coupled device (CCD) camera." Applicant further argues Osaka fails to suggest independent Claim 5 limitation of "sandwiching a green sheet to be baked by spacers."

As pointed out in prior rejection, Osaka discloses a ceramic composition (abstract, lines 1-5) with a green sheet having the possibility of sustaining a fracture or crack (column 1, lines 26-27). As pointed out in the prior office action, an image obtained with a charged coupled device is an experimental procedure and is not considered to be part of the claimed product, which is a ceramic sheet. Osaka discloses at least one species of fine ceramic powder consisting of zirconia having an average particle diameter in the range of 0.01 to 2 microns and the individual particles of the ceramic powder as the raw material having a spherical shape (column 3, lines 37-51). Osaka discloses a fixed gap (analogous to spacers) and subsequently heating and

drying continuously at a fixed temperature range of 40°C to 150°C to produce the ceramic green sheet (column 7, lines 62-65) and heating at the specified temperature a green sheet is sandwiched and baked within the ceramic material. Osaka discloses very small spherical particles of zirconia having an average diameter of 0.5 micron (column 9, lines 61-62). Applicant discloses the term "defect" means a foreign matter present on the surface or inside the ceramic sheet. Osaka discloses the green sheet having a fracture or crack, which is, by Applicant's definition, a defect. The Examiner interprets this fracture or crack as one defect which is less than the 5 defects applicant claims. Additionally, Osaka teaches the green sheet articles to be "perfectly free" from crack or fractures (see examples 19-21).

In response to applicant's argument that "the spherical particles used in the present invention mean particles of which spherical shape can be visually recognized by a microphotograph," a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Because Osaka provides a ceramic sheet having not more than 5 defects in an area of 30mm or less and shows sandwiching a green sheet to be baked with spacers, the reference meets the claimed limitation requirements.

Applicant's arguments to 35 USC 103(a) being unpatentable over Kazuo et al. (JP 8151270) and Kazuo et al. (JP 8151271) has been fully considered but is unpersuasive. Applicant argues both references are silent about the configuration and shape of the powder used for the sheets. Although neither reference teach the particles being of a specific shape or configuration, it would have been obvious to one of ordinary skill in the art to make the particles spherical, since such a modification would have involved a mere change in the shape of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art. Applicant argues neither reference suggest sandwiching a green sheet baked by spacers. Both references depict a sandwiching of the various parts of the invention with the green sheet (as pointed out in claim 5) as the spacer (see the examples). In light of the prior comments, both references do in fact read over the claimed limitations and are therefore upheld.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Ferguson whose telephone number is (703) 305-9978. The examiner can normally be reached on Monday through Friday 8:30 AM – 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. Please allow the examiner twenty-four hours to return your call.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2351.

  
Lawrence D. Ferguson  
Examiner  
Art Unit 1774

CYNTHIA H. KELLY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700

